PAIN – 2022

- A universal experience
- Reason many patients seek health care
- Very costly to society
- Vital physiological warning system
- Effective pain treatment available
- Unrelieved pain has consequences
    - Unnecessary suffering, impaired recovery from illness/surgery, immunosuppression, and sleep disturbances
- Pain is:
    - A complex phenomenon with NO simple definition
    - Highly subjective
    - Individual
    - Personal
- International Association for the Study of Pain definition of pain:
    - Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or it is described in terms of such damage

- "Pain is whatever the patient says it is and exists whenever the patient says it does" (McCaffery)
    - Nurses must believe patient's pain experience
    - Pain is difficult to assess because we can neither see nor feel the patient's pain.
- Effective pain management is major aspect of nursing care
    - Promotes healing
    - Prevents complications
    - Reduces suffering
    - Prevents development of incurable pain states
    - Severe pain is an emergency.
- Normal function of pain
    - Pain serves as a mechanism to warn us about potential for physical harm
    - Body's protective mechanism
    - Serves as a warning of disease or threat to body

Classifications of Pain: Nociceptive vs. Neuropathic

- **Nociceptive Pain**
    - Intact, functioning nervous system
    - Sends signal that tissues are damaged
    - Requires attention and proper care

- Sub Types of Nociceptive Pain
    - *Somatic Pain*
        - Originates in skin, muscles, bone, tissue
        - Usually well localized
        - Character, intensity, and location match type and extent of injury

    - *Visceral Pain*
        - Activation of nerve fibers <u>from organs</u> or hollow viscera
        - Poorly localized
        - Cramping, throbbing, aching
        - Associated with "feeling sick"
            - Diaphoresis or nausea
        - Caused by:
            - tissues stretching
            - ischemia

- muscle spasms

- **Neuropathic Pain**
  - Damaged or malfunctioning nerves
  - Abnormal nerves due to illness, injury, undetermined cause
  - Difficult to treat, usually chronic
  - Burning, electric shock, tingling, dull, aching

  Common causes can be:
    - trauma, inflammation, metabolic diseases (DM), infections of the nervous system, alcoholism, tumors, even unmanaged perioperative pain
- Neuropathic Pain
  - *Peripheral Neuropathy*
    - Pain felt along peripheral nerves
      - Examples: Diabetic neuropathy, post-herpetic neuralgia (Post shingles pain)
  - *Central Neuropathic Pain*
    - Caused by lesion or dysfunction of Central Nervous System (CNS)
      - Post-stroke pain
      - Multiple Sclerosis
  - *Sympathetically Maintained Pain*
    - Symptom of neuropathic pain
    - Abnormal connections between pain fibers and sympathetic nervous system
      - Phantom limb pain
  - *Cancer Pain*
    - Directly related to
      - Tumor
      - Specific pain syndromes
      - Treatment

Classifications of Pain: Acute vs. Chronic

Acute Pain

- Begins suddenly, Mild to severe
- Duration: **less than 3 months** or as long as it takes for normal healing to occur
- Relieved when underlying cause gone
- If unrelieved, may become chronic
- **Usually see changes in vital signs and behavior**

Chronic Pain

- Prolonged duration
  - Recurrent or **greater than 3 months**
  - Interferes with functioning
- Persists when injury has healed
- Mild to severe
- May have chronic pain without injury or evidence of body damage
- Accompanying behaviors **(VS normal), depression**

Intractable pain

- Resistant to relief
- Difficult to relieve
- Try multiple interventions
- Affects quality of life

Other ways to Classify Pain: Location

- Useful in determining underlying problem
  - Backache, headache, chest pain
- Can be deceiving…things not always as they seem
  - Radiating pain- pain felt in one area travels down a nerve, causing pain along the length of the nerve.

- Referred pain- Referred pain is what happens when you feel pain in an area of your body that is not actually the original source of the pain signals

Other ways to Classify Pain: Intensity

- Patient describes intensity of pain
- Descriptor Scale
  - Mild, moderate, severe
- Numeric Scale: 0 -10
- Other scales:
  - Faces
  - Nonverbal

Concepts Associated with Pain

- Pain Threshold: least amount of stimuli for person to feel pain sensation
  - Vary slightly from person to person
  - Changes little in same individual over time
- Pain Tolerance: maximum amount painful stimuli person can withstand before seeking relief (this is there pain goal)
  - Varies considerably from person to person
  - Varies depending on situation

Physiology of Pain

- Physiological processes by which info about tissue damage is communicated to the CNS is known as NOCICEPTION
  - Nociception consists of four parts:

Transduction

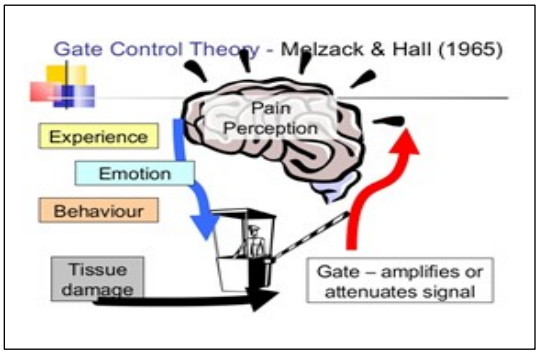
- 1st step in experience of pain
- Nociceptors activated by exposure to noxious mechanical, chemical, or thermal stimuli
- Nociceptors spark electrical impulse that is conducted along nerve

Transmission

- Occurs in 3 segments:
  - Pain impulse travels from peripheral nerve (site of injury) to spinal cord
  - Spinal cord to brain stem and thalamus
  - Thalamus to cerebral cortex, where pain perception occurs.

Perception

- Becomes conscious of pain
- Occurs when pain is recognized, defined, and assigned meaning to individual
- Three key factors
  - Threshold: point which identifies pain
  - Distractibility: degree can ignore pain
  - Tolerance: point at which act to stop pain



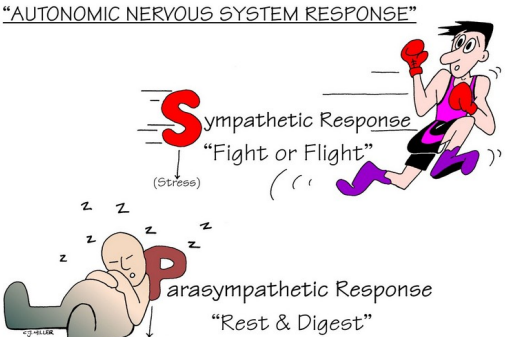
Modulation

- "Descending system"
- Neurons in thalamus and brainstem send signals back down spinal cord
- Release substances that inhibit ascending pain impulses
  - Endogenous opioids, serotonin, norepinephrine

Gate Control Theory

- Peripheral nerve fibers carry pain signals to SC and then to brain
- Small diameter fibers carry pain stimuli
- Large diameter fibers "close the gate" and inhibit transmission of pain impulses to the brain
  - Heat, ice, massage, electrical stimulation, etc.
- When gate open, pain impulses go to brain, when closed, blocked from going to brain

Physiological Responses to Pain



- Sympathetic nervous system stimulation
- Initial response (fight or flight)
  - Rapid, shallow RR's
  - **Increased HR**
  - **Increased BP**
  - Diaphoresis/pallor
  - Anxiety, agitation, confusion
  - Urine retention
- **These responses are absent in patients with CHRONIC PAIN**
- Parasympathetic Nervous System (Rest and Digest)
  - Body's adaption as pain continues
  - **Decreased** HR, BP, and RR
  - Weakness /exhaustion from expenditure of physical energy
- Untreated or persistent pain can lead to chronic pain syndromes

Pain management: Nursing priority

- Pain is the 5th vital sign
- Patients often don't voice pain until we ask!
- Pain affects every aspect of our lives
  - Sleep, concentration, appetite
  - Work, relationships, leisure activities
  - Emotional status

Barriers to Pain Management

- Nursing perspective
  - Personal biases
- Patient perspective
  - Fears, incorrect assumptions, poor communication
- Limited access to care

Pain Assessment

- Joint Commission Standards for Pain Assessment
  - All patients will be asked if have pain
  - Patients will be informed of right to have pain managed
  - Patients will be told about how pain managed
  - Detailed pain assessment done
  - Reassessment done based on hospital criteria
  - Healthcare professionals dealing with pain must be trained to do so

Pain Assessment

- Assess all factors affecting pain experience
  - Ethnic/Cultural
  - Developmental Stage
  - Past Pain Experiences
  - Meaning of Pain
- Identify etiology of pain
- Identify patient's pain goal
- (Attempt to) Understand patient's pain experience

Pain Assessment

- Pain assessment consists of two parts
- Pain history (subjective data)
  - Obtain patient's perception of pain
- Observation (objective data)
  - Behavioral and physiological responses

Subjective Data (**Nonverbal and Faces Pain Scales available on Edvance360)

- PQRST
  - **P**rovocative or **P**alliative
  - **Q**uality
  - **R**egion and **R**adiation
  - **S**everity
    - Also ask pain goal
  - **T**iming

Objective Data

- Physical Assessment
  - Vital signs
  - Related symptoms:
    - Nausea, vomiting
    - Anorexia
    - Withdrawal
  - Facial expressions
  - Verbal cues
  - Posture

Nursing Diagnoses

- Acute pain related to tissue manipulation from a total knee replacement
- Chronic pain due to inflammation from rheumatoid arthritis

Other Diagnoses: Ineffective breathing pattern, Anxiety, Impaired physical mobility, Deficient Knowledge, and Imbalanced nutrition

Expected Outcomes

- Patient will have a pain level of <3 on a scale of 0 – 10 during my time of care.
- Patient will be able to ambulate 100 ft. in hallway and complete self-care with a pain level not greater than 4 on a scale of 0 –10 on post-op day 3.

Pain Management: A Nursing Responsibility

- Key Strategies to Pain Management
  - Acknowledge and accept pain
  - Assist patient, family/support persons
  - Reduce misconceptions about pain
  - Reduce fear and anxiety
  - Prevent pain from occurring

Nonpharmacologic Pain Management Techniques

- Massage, Exercise, Heat or Cold therapy
- TENS:
  - Transcutaneous Electrical Nerve Stimulation
  - Low voltage electrical current through electrodes on skin surface over painful area
  - Patient feels paresthesia (prickly, tingling, burning sensation)
  - Releases endogenous endorphins
    - Closes the “gate”
- Acupuncture
  - Insertion of needles or pressure at specific pressure points at varying depths to mobilize endogenous opiates
  - Closes the “gate”

Cognitive Pain Relief Techniques

- Distraction
- Hypnosis
- Relaxation Strategies
  - Guided Imagery
  - Music Therapy

- Relaxation, meditation, deep breathing

Surgical Interventions

- Nerve block – drug injected into nerve pathway to block transmission of impulse
- Neuroablation – Nerves are destroyed to interrupt pain transmission
  - Last resort for intractable pain

Control of Painful Stimuli

- Smooth wrinkled bed linens
- Not lying on tubing
- Loosen anything constrictive
- Change wet dressings, linens, gowns, etc.
- Position of comfort
- Keep skin clean & dry

Pharmacologic Pain Management: Medication Therapy

- *Drug Therapy: Non-opioids*
  - Mild to moderate pain
  - Often available OTC
  - Do not produce tolerance or dependence
  - Examples: aspirin, acetaminophen (Tylenol), ibuprofen, (Advil, Motrin)
- *Drug Therapy: Opioids/Narcotics*
  - Moderate to severe pain
  - Controlled substances
  - Addictive and may be abused
  - Acts on higher centers of brain
  - Modifies perception and reaction to pain
  - *Monitor <u>respiratory</u> status*
  - **Naloxone (Narcan)** used to reverse effects of narcotics – Antidote.
  - Examples:
    - Weak Opioid Drugs
      - codeine (Codeine)
      - tramadol (Ultram)
    - Combination of opioids and non-opioids
      - Percocet = Oxycodone + Acetaminophen (Tylenol)
      - Vicodin = Hydrocodone + Acetaminophen (Tylenol)
    - Strong Opioid Drugs
      - Morphine
      - Hydromorphone (Dilaudid)
      - Fentanyl
- Drug Therapy: Adjuvant drugs (Coanalgesics)
  - Not classified as pain medication
  - Has properties that reduce pain or other discomforts
  - Potentiates the effects of other pain meds
    - Antidepressants
    - Anticonvulsants
    - Anti-anxiety meds

Routes for Opiate Delivery

- Oral
- Nasal
- Transdermal
- Rectal
- Subcutaneous
- Intramuscular

- Intravenous
    - PCA
- Epidural

PCA (Patient-controlled analgesia)

- Medication delivery system that allows clients to self-administer safe doses of opioids
- Good candidates
    - Post-op
    - Chronic disease
    - Labor & delivery
    - Patients who are alert & can follow directions
- Poor candidates
    - History of respiratory conditions
    - History of drug abuse
    - Mentally confused or history of dementia
- Benefits
    - Less lag time between need for & admin of medication
    - Increases sense of control
    - Decreases amount of med they need
- Safeguards/settings in place to prevent overdosing
- Client is *only* person who should push the button
- Patient should alert RN if not controlling pain
- Protocols in place to treat side effects (i.e. respiratory depression, itching)

PCEA (Patient-controlled epidural analgesia)

- Drug administered via catheter into epidural space around the spinal cord
- Binds to nerve roots
- Blocks sensory impulses
- Anesthesiologist places – Assess but don't touch ☺
- Bupivicaine
    - Medication in first PCEA bag
    - Causes nerve block
    - No feeling in feet & legs
    - Maintain strict bedrest until 4 hours after bupivicaine is discontinued

Common Side Effects of Opioids

- Constipation, Nausea and vomiting, Sedation, Respiratory depression, Pruritus, Urinary retention

Nursing Actions

- <u>Believe the patient</u>
- Clarify responsibilities in pain relief
- Collaborate with the patient
- Respect the patient's response to pain
- Be supportive & check on patient frequently

Evaluation of Pain Control

- Patient best resource for evaluating pain relief
- Use pain scale for consistency
- Observe verbal and non-verbal cues

Documentation of Pain Control

- Essential component of care
- Document ongoing assessment of pain
- Document both subjective and objective data
    - How patient describes pain in quotes
    - Pain level on pain scale
    - Physiological signs of pain (BP, vitals, etc.)
- Document pain intervention provided
- Re-evaluate patient after intervention and document new pain level
- If pain not improved, document next intervention

    - Comfort measures (Ex. Back rub, massage, repositioning, rest period, ice therapy, warm blanket)
    - Notified healthcare provider
- Pain documentation is ongoing even if denies pain of first assessment

Last Note:

- Pain assessment and management is a nursing priority!
- The nurse must work with the patient to ensure that his/her goals for pain management are achieved.
- Remember that measures other than just giving analgesics go a long way to decrease pain.
- Always be caring and compassionate when dealing with pain.